

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-59 (Canceled)

60 (Previously presented). A process for the preparation of a transgenic plant, which process comprises:

- (i) transforming a plant cell with a chimeric gene comprising (a) a promoter that directs gene expression in a plant, said promoter being operably linked to (b) a coding sequence which encodes for phosphofructokinase; and
- (ii) regenerating a plant from the transformed plant cell; wherein expression of said chimeric gene in said regenerated plant causes a modification of the amount of a metabolic intermediate:
 - (a) in the pre-existing intracellular pathway of glycolysis.
 - (b) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or
 - (c) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

61 (Previously presented). The process of claim 60, wherein said chimeric gene also comprises a coding sequence encoding a second enzyme.

62 (Previously presented). The process of claim 60, wherein said chimeric gene is expressed in a tuber of said regenerated plant.

63 (Previously presented). The process of claim 60, wherein said chimeric gene is expressed in a seed of said regenerated plant.

64 (Previously presented). The process of claim 60, wherein the coding sequence is from a plant gene.

65 (Previously presented). The method of claim 60, wherein the coding sequence is from a non-plant gene.

66 (Previously presented). A transgenic plant comprising a chimeric gene which comprises;

- (a) a promoter that directs gene expression in a plant, said promoter being operably linked to
- (b) a coding sequence which encodes phosphofructokinase, wherein expression of said chimeric gene in said transgenic plant causes a modification of the amount of a metabolic intermediate:
 - (i) in the pre-existing intracellular pathway of glycolysis,
 - (ii) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or
 - (iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

67 (Previously presented). The transgenic plant of claim 66, wherein the chimeric gene also comprises a coding sequence that encodes a second enzyme.

68 (Currently amended). A process for the preparation of a transgenic plant, which process comprises:

- (i) transforming a plant cell with a chimeric gene comprising (a) a promoter that directs gene expression in a plant, said promoter being operably linked to (b) a coding sequence which encodes an enzyme selected from the group consisting of pyruvate kinase from *E. coli*, yeast or potato, acid invertase from yeast, ~~starch synthase~~, and sucrose synthase from potato, ~~6-phosphofructokinase (pyrophosphate) and sucrose phosphate synthetase~~; and
- (ii) regenerating a plant from the transformed plant cell; wherein expression of said chimeric gene in said regenerated plant causes a modification of the amount of a metabolic intermediate:
 - (a) in the pre-existing intracellular pathway of glycolysis.
 - (b) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or

- (c) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

69 (Canceled).

70 (Previously presented). The process of claim 68, wherein the enzyme is pyruvate kinase.

71 (Canceled).

72 (Previously presented). The process of claim 68, wherein the enzyme is sucrose synthase.

73 (Previously presented). The process of claim 68, wherein the enzyme is acid invertase.

74-75 (Canceled).

76 (Previously presented). The process of claim 68, wherein said chimeric gene also comprises a coding sequence encoding a second enzyme.

77 (Previously presented). The process of claim 68, wherein said chimeric gene is expressed in a tuber of said regenerated plant.

78 (Previously presented). The process of claim 68, wherein said chimeric gene is expressed in a seed of said regenerated plant.

79-80 (Canceled).

81 (Currently amended). A transgenic plant comprising a chimeric gene which comprises:

- (a) a promoter that directs gene expression in a plant, said promoter being operably linked to

- (b) a coding sequence which encodes an enzyme selected from the group consisting of pyruvate kinase from *E. coli*, yeast or potato, acid invertase from yeast, ~~starch synthase~~, and sucrose synthase from potato, ~~6-phosphofructokinase (pyrophosphate) and sucrose phosphate synthetase~~,

wherein expression of said chimeric gene in said transgenic plant causes a modification of the amount of a metabolic intermediate:

- (i) in the pre-existing intracellular pathway of glycolysis,
- (ii) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or
- (iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

82 (Canceled).

83 (Previously presented). The transgenic plant of claim 81, wherein the enzyme is pyruvate kinase.

84 (Canceled).

85 (Previously presented). The transgenic plant of claim 81, wherein the enzyme is acid invertase.

86 (Previously presented). The transgenic plant of claim 81, wherein the enzyme is sucrose synthase.

87-89 (Canceled).

90 (Currently amended). A transgenic plant comprising a chimeric gene which comprises:

- (a) a promoter that directs gene expression in a plant, said promoter being operably linked to
- (b) a first coding sequence which encodes phosphofructokinase and a second coding sequence which encodes ~~an enzyme selected from the~~

~~group consisting of pyruvate kinase, acid invertase, starch synthase, adenosine diphosphoglucose pyrophosphorylase, sucrose synthase, 6-phosphofructokinase (pyrophosphate) and sucrose phosphate synthetase,~~

wherein expression of said chimeric gene in said transgenic plant causes a modification of the amount of a metabolic intermediate:

- (i) in the pre-existing intracellular pathway of glycolysis,
- (ii) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or
- (iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

91 (Previously presented). The transgenic plant of claim 90 which is a barley, wheat, maize, rice, cotton, lettuce, melon, pea, petunia, potato, rape, soyabean, sugar beet, sunflower, tobacco or tomato plant.

92 (Canceled).

93 (Currently amended). A chimeric gene comprising:

- (a) a promoter that directs gene expression in a plant, said promoter being operably linked to
- (b) a coding sequence which encodes an enzyme selected from the group consisting of phosphofructokinase, pyruvate kinase from *E. coli*, yeast or potato, acid invertase from yeast, ~~starch synthase, and~~ sucrose synthase from potato, ~~6-phosphofructokinase (pyrophosphate) and sucrose phosphate synthetase,~~

wherein expression of said chimeric gene in a plant cell modifies the amount of a metabolic intermediate:

- (i) in the pre-existing intracellular pathway of glycolysis,
- (ii) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or
- (iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

94 (Canceled).

95 (Currently amended). A transgenic tuber comprising a chimeric gene which comprises:

- (a) a promoter that directs gene expression in a tuber, said promoter being operably linked to
- (b) a coding sequence which encodes an enzyme selected from the group consisting of phosphofructokinase, pyruvate kinase from *E. coli*, yeast or potato, acid invertase from yeast, ~~starch-synthase~~, and sucrose synthase from potato, ~~6-phosphofructokinase (pyrophosphate) and—sucrose-phosphate-synthetase~~;

wherein expression of said chimeric gene in said transgenic tuber causes a modification of the amount of a metabolic intermediate:

- (i) in the pre-existing intracellular pathway of glycolysis,
- (ii) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or
- (iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.

96 (Currently amended). A transgenic seed comprising a chimeric gene which comprises;

- (a) a promoter that directs gene expression in a plant, said promoter being operably linked to
- (b) a coding sequence which encodes an enzyme selected from the group consisting of phosphofructokinase, pyruvate kinase from *E. coli*, yeast or potato, acid invertase from yeast, ~~starch-synthase~~, and sucrose synthase from potato, ~~6-phosphofructokinase (pyrophosphate) and—sucrose-phosphate-synthetase~~;

wherein expression of said chimeric gene in a transgenic plant grown from said transgenic seed causes a modification of the amount of a metabolic intermediate:

- (i) in the pre-existing intracellular pathway of glycolysis,
- (ii) in the pre-existing intracellular pathway for the synthesis or degradation of starch, or

- (iii) in the pre-existing intracellular pathway for the synthesis or degradation of sucrose or reducing sugar.